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1. Document ID: JP 04171744 A

L1: Entry 1 of 2

File: JPAB

Jun 18, 1992

PUB-NO: JP404171744A  
DOCUMENT-IDENTIFIER: JP 04171744 A  
TITLE: MANUFACTURE OF SEMICONDUCTOR DEVICE

PUBN-DATE: June 18, 1992

## INVENTOR- INFORMATION:

NAME	COUNTRY
TAKESHITA, NAOHIKO	
HAGI, KIMIO	
OBATA, MASANORI	

## ASSIGNEE- INFORMATION:

NAME	COUNTRY
MITSUBISHI ELECTRIC CORP	

APPL-NO: JP02298695

APPL-DATE: November 2, 1990

US-CL-CURRENT: 438/FOR.354

INT-CL (IPC): H01L 21/90; H01L 21/3205

## ABSTRACT:

PURPOSE: To provide a reliable semiconductor device with reduced contact resistance by cleaning a lower aluminum wiring layer exposed through a contact hole by dry etching using a mixture of rare gas and hydrogen to remove the denatured layer on the wiring surface.

CONSTITUTION: A lower aluminum wiring layer 3 is cleaned by dry etching using an argon-hydrogen mixture through a contact hole. The fluorine and oxygen in a denatured layer are converted into hydrofluoric acid and water both by the physical action of argon plasma and by the chemical reaction of hydrogen. The reaction temperature is lower than the process temperature, but the hydrofluoric acid and water are evaporated. An upper aluminum wiring layer 5 is formed on a second insulating film 4 in such a manner that it is connected electrically with the lower wiring layer 3 through a contact hole. According to this method, the contact resistance between wiring layers is reduced, and a reliable device is obtained.

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Full	Title	Citation	Front	Review	Classification	Date	Reference
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2. Document ID: JP 04171744 A

L1: Entry 2 of 2

File: DWPI

Jun 18, 1992

DERWENT-ACC-NO: 1992-254554

DERWENT-WEEK: 199231

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TITLE: Mfg. semiconductor device with reduced contact-resistance - by dry etching cleaning of exposed lower layer aluminium@ wiring layer with mixed gas of rare and hydrogen@ gases NoAbstract

## PATENT-ASSIGNEE:

ASSIGNEE	CODE
MITSUBISHI ELECTRIC CORP	MITQ

PRIORITY-DATA: 1990JP-0298695 (November 2, 1990)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>JP 04171744 A</u>	June 18, 1992		003	H01L021/90

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP04171744A	November 2, 1990	1990JP-0298695	

INT-CL (IPC): H01L 21/3205; H01L 21/90

ABSTRACTED-PUB-NO:

EQUIVALENT-ABSTRACTS:

TITLE-TERMS: MANUFACTURE SEMICONDUCTOR DEVICE REDUCE CONTACT RESISTANCE DRY ETCH CLEAN EXPOSE LOWER LAYER ALUMINIUM@ WIRE LAYER MIX GAS RARE HYDROGEN@ GAS NOABSTRACT

DERWENT-CLASS: L03 U11

CPI-CODES: L04-C07B; L04-C10C;

EPI-CODES: U11-C05D2; U11-D03B2;

## SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1992-113339

Non-CPI Secondary Accession Numbers: N1992-194222

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1. 2/34/1 (Item 1 from file: 351)

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WPI Acc No: 1992-254554/ 199231

Mfg. semiconductor device with reduced contact-resistance -  
by dry etching cleaning of exposed lower layer aluminium@ wiring  
with mixed gas of rare and hydrogen@ gases NoAbstract

Patent Assignee: MITSUBISHI ELECTRIC CORP (MITQ )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicant No	Kind	Date	Week
JP 4171744	A	19920618	JP 90298695	A	19901102	199231

Priority Applications (No Type Date): JP 90298695 A 19901102

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 4171744	A		3	H01L-021/90	

Derwent Class: L03; U11

International Patent Class (Main): H01L-021/90

International Patent Class (Additional): H01L-021/3205

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